We claim:

1. An RF system, comprising:

an RF section;

a processor operably connected to the RF section;

an input/output subsystem operably connected to the processor; and

the processor being configured to control transmission of sync signals from the RF section in response to receiving sync signals at the RF section from another RF system.

2. The RF system of claim 1 in which the input/output subsystem is operably connected to a host selected from the group consisting of a video game console, a set top box, a consumer electronic device, a computer and data networking equipment.

3. The RF system of claim 2 in which the host is a video game console.

4. The RF system of claim 1 in which the processor is configured to cause the RF section to transmit polling volleys in a time division manner.

5. The RF system of claim 4 in which the processor is configured to cause the RF section to transmit a sync signal in a sync slot associated with a polling volley.

6. The RF system of claim 5 in which the processor is configured to cause the RF section to transmit a sync signal in association with a first polling volley and then listen for sync signals from other RF systems in association with a subsequent polling volley.

7. The RF system of claim 6 in which the processor is configured to cause the RF section to delay sending a sync signal when a sync signal is received from another RF system.

8. The RF system of claim 7 in which the processor is configured to cause the RF section to advance the sending of a sync signal when a sync signal is no longer received from another RF system.

9. The RF system of claim 1 in which the processor is configured to receive responses from peripherals transceiver in time slots associated with each polling volley, in which each peripheral transceiver is assigned a specific time slot.

10. The RF system of claim 9 further comprising a visual indicator operably connected to the processor for indicating a change in assignment of a time slot for a peripheral transceiver.

11. A method for exchanging information between transceivers, the method comprising the steps of:

transmitting and receiving signals, including sync signals, from a first base transceiver; and

controlling transmission of sync signals from the first base transceiver in response to receiving sync signals from another base transceiver.

12. The method of claim 11 in which transmitting signals comprises:

transmitting signals from the first base transceiver to a first peripheral transceiver in successive polling volleys on a first series of frequencies selected from a set of frequencies.

13. The method of claim 12 in which controlling transmission of sync signals comprises:

transmitting a sync signal from the first base transceiver in a time slot associated with a selected polling volley;

in association with a succeeding polling volley to the selected polling volley, the first base transceiver delaying sending a sync signal to permit another base transceiver to send a sync signal;

in association with the succeeding polling volley, the first base transceiver listening for a sync signal from another base transceiver; and

adjusting the start time of polling volleys used by the first base transceiver upon receipt of a sync signal from another base transceiver.

14. The method of claim 13 further comprising:

transmitting signals from a second base transceiver to a second peripheral transceiver in association with the successive polling volleys on a second series of frequencies selected from the set of frequencies, where the first series and second series of frequencies do not clash with each other.

15. The method of claim 11 in which the first base transceiver communicates with a host selected from the group consisting of a video game console, a set top box, a consumer electronic device, a computer and data networking equipment.

16. The method of claim 15 in which the host is a video game console.

17. The method of claim 11 in which the first base transceiver transmits polling volleys in a time division manner.

18. The method of claim 17 in which the first base transceiver transmits a sync signal corresponding to a polling volley in a sync slot associated with the polling volley.

19. The method of claim 17 in which the first base transceiver transmits a sync signal in association with a first polling volley and then listens for sync signals from other base transceivers in association with a subsequent polling volley.

20. The method of claim 19 in which the first base transceiver delays sending a sync signal when a sync signal is received from another base transceiver.

21. The method of claim 11 in which the first base transceiver and second base transceiver are colocated and each is synchronized to start a polling volley at the same time.

22. The method of claim 11 in which the sync signals are transmitted as part of packets carrying data to other base transceivers.

23. The method of claim 22 in which the packets contain hop sequence information.

24. The method of claim 23 in which the packets contain peripheral state information.

25. The method of claim 24 in which the packets contain inter-base transceiver messages.

26. The method of claim 12 in which the first set of frequencies follows a hopping pattern.

27. The method of claim 26 in which the first set of frequencies and the second set of frequencies follow a hopping pattern.

28. The method of claim 11 in which the first base transceiver begins transmitting upon power up with a random delay to avoid clashing with another base transceiver.

29. An RF system, comprising:

an RF section;

a processor operably connected to the RF section;

an input/output subsystem operably connected to the processor and to a game console; and

the processor being configured to scan a set of channels for at least one channel suitable for communication with another RF system.

30. The RF system of claim 29 in which the processor is configured to select channels for use that have a lower degree of impairment than channels not selected for use.

31. The RF system of claim 30 in which the processor is configured to adapt for impaired channels by using a method selected from the group consisting of coded data changes, abandoning unusable channels and changing frequency hopping sequences, variable data rates and re-transmitted data.

32. A method of exchanging game information between transceivers, the method comprising the steps of:

scanning a set of available channels for at least one channel suitable for communication between the transceivers; and

exchanging game data between the transceivers using at least one suitable channel.

33. The method of claim 32 further comprising the step of preferentially using channels having lower degree of impairment.

34. The method of claim 33 further comprising the steps of ranking the available channels according to degree of impairment and selecting the channels having the least degree of impairment.

35. The method of claim 34 further comprising the step of adapting for impaired channels by using a method selected from the group consisting of coded data changes, abandoning unusable channels and changing frequency hopping sequences, variable data rates and re-transmitted data.

36. An RF system, comprising:

an RF section;

a processor operably connected to the RF section;

an input/output subsystem operably connected to the processor and to a user interface;

a manually operated switch operably connected to the processor;

and

the processor being configured to respond to operation of the manually operated switch to cause the RF section to transmit a request selected from the group consisting of a request for a change of time slot assignment for communications between the base transceiver and the RF system and a request for a change of base transceiver with which the RF system is to communicate.

37. The RF system of claim 36 in which the request is a request transmitted to a base transceiver with which communication has already been established.

38. The RF system of claim 37 in which the request is a request for a change of time slot assignment for communications between the base transceiver and the RF system.

39. The RF system of claim 36 in which the request is a request to change to communication with a different base transceiver.

40. The RF system of claim 36 in which the user interface is a user interface for a game.

41. A method for changing communications between a base transceiver and an RF system, the method comprising the steps of:

assigning a time slot to a peripheral RF system for responding to a first base transceiver; and

manually switching to a different time slot for sending information to the base transceiver.

42. The method of claim 38 further comprising the step of visually displaying an indication of the assigned time slot on the first base transceiver.

43. The method of claim 41 further comprising manually switching to communication with a second base transceiver.

44. A method of exchanging data between transceivers, the method comprising sequentially repeating the steps of:

transmitting a polling volley from a base transceiver to plural peripheral transceivers, wherein the polling volley contains sequential packets addressed to the plural peripheral transceivers; and

the plural peripheral transceivers responding in order to the polling volley after the termination of the polling volley.

45. The method of claim 44 in which the peripheral transceivers are game controllers communicating with a base transceiver associated with a game console.

46. The method of claim 44 in which the peripheral transceivers cooperate with each other.

47. The method of claim 44 in which:

the polling volley contains time slots arranged in order with each time slot addressed to a different peripheral transceiver; and

the responses to the polling volley are arranged in an order corresponding to the order of the time slots of the polling volley.

48. The method of claim 47 in which the response of each peripheral transceiver is assigned to a specific time slot associated with the polling volley.

49. The method of claim 48 in which at least one response time slot is divided into sub-intervals assigned to plural cooperating sub-peripherals.

50. A method of exchanging data between plural base transceivers operating on a common frequency assignment and at least one peripheral transceiver associated with each base transceiver, the method comprising the steps of:

each of the plural base transceivers transmitting a sync packet at times at which none of the other of the plural base transceivers are transmitting a sync packet;

each of the plural base transceivers listening for sync packets from others of the plural base transceivers; and

each of the plural base transceivers adjusting a respective time clock associated with the base transceiver according to information contained in the sync packets.

51. The method of claim 50 further comprising the step of:

controlling transmission of sync signals from each base transceiver in response to receiving sync signals from other base transceivers.

52. The method of claim 51 further comprising the step of:

transmitting signals from each respective base transceiver to a corresponding peripheral transceiver in successive polling volleys on a first series of frequencies selected from a set of frequencies.

53. The method of claim 52 in which controlling transmission of sync signals comprises:

transmitting a sync signal from the first base transceiver in a time slot associated with a selected polling volley;

in association with a succeeding polling volley to the selected polling volley, the first base transceiver delaying sending a sync signal to permit another base transceiver to send a sync signal;

in association with the succeeding polling volley, the first base transceiver listening for a sync signal from another base transceiver; and

adjusting the start time of polling volleys used by the first base transceiver upon receipt of a sync signal from another base transceiver.

54. The method of claim 50 further comprising the steps of:

transmitting a polling volley from each base transceiver to plural peripheral transceivers, wherein the polling volley contains sequential packets addressed to the plural peripheral transceivers; and

the plural peripheral transceivers responding in order to the polling volley after the termination of the polling volley.

55. The method of claim 54 in which the peripheral transceivers are game controllers communicating with a respective base transceiver associated with a game console.

56. The method of claim 55 in which the peripheral transceivers cooperate with each other.

57. The method of claim 40 in which:

the polling volley contains time slots arranged in order with each time slot addressed to a different peripheral transceiver; and

the responses to the polling volley are arranged in an order corresponding to the order of the time slots of the polling volley.

58. The method of claim 57 in which the response of each peripheral transceiver is assigned to a specific time slot associated with the polling volley.

59. The method of claim 57 in which at least one response time slot is divided into sub-intervals assigned to plural cooperating sub-peripherals.

60. A method of exchanging data between transceivers, the method comprising sequentially repeating the steps of:

during a polling volley, each of plural base transceivers transmitting a data packet in different time slots on a single channel to a corresponding one of plural peripheral transceivers; and

the plural peripheral transceivers responding in order to the packets in the polling volley after the termination of the polling volley.

61. The method of claim 60 in which:

the polling volley contains time slots arranged in order with each time slot addressed to a different peripheral transceiver; and

the responses to the polling volley are arranged in an order corresponding to the order of the time slots of the polling volley.

62. A method of synchronizing N plural transceivers, the method comprising the steps of:

each of the N plural transceivers transmitting a sync signal when none of the others of the N plural transceivers are transmitting a sync signal;

each of the N plural transceivers transmitting data in polling volleys;

each of the N plural transceivers transmitting a sync signal each N+1 polling volleys; and

each of the N plural transceivers synchronizing to the sync signals from the other base transceivers.